<center>**REMARKS/ARGUMENTS**</center>

This Amendment is submitted in response to the Office Action dated September 9, 2009.

I.   Formal Interview Request

It appears that the current rejections may be based on a continued miss-understanding of one or more of the applied references and/or the claims.

Applicant's undersigned representative hereby requests an interview with the Examiner should, after consideration of the arguments raised herein, the Examiner intend to maintain any of the current rejections. It is requested that the interview request be granted prior to issuance of a new Office Action so that prosecution may be performed in as efficient a manner as possible. The Examiner is requested to call Applicant's undersigned representative at **732-936-1400** to schedule the requested interview if the Examiner intends to maintain any of the rejections.

It is hoped that a discussion of the applied references and the claimed subject matter will facilitate the Examiner's appreciation for the patentable nature of the claimed subject matter should the Examiner have any remaining doubts after reading the following arguments.

II.   Introduction

In view of the amendments, claims 23-42 are now pending.

New claims 40-42 have been added and claim 39 has been amended. Support for the amendments can be found in the summary of the invention section of the present application

which discusses MPEG-2 as well as image areas including macroblocks.

The amendment to claim 39 and new claims 40-42 have been added to highlight some of the problems with the Examiner's interpretation of the applied references and the Examiner's apparent attempt to interpret each predetermined image region as a single macroblock.

Claims 23-33 stand rejected based on a Examiner proposed combination of the previously applied De With et al. patent (US 5,530,481) in view of Keesman et al. patent (US 5,805,224). In addition, claims 34-39 stand rejected under 35 USC §103(a) as being unpatentable over Xia et al. (US 6,014,466) in view of Zhu patent (US 5,5757,668).

In the last response Applicant addressed and overcame a rejection of claims 23-33 based on the same references which are now currently used to reject the claims. While the Examiner cites different portions of the DeWith et al. patent and the Keesman et al. patent to make the current rejections, the current rejections based on these references fails because the references continue to fail to disclose or render obvious the features recited in claim 23. Furthermore, as will be discussed below, the Examiner proposed combination and modification of the references applied against claims 23-33 is **NOT** obvious because **the Examiner's proposed modification of the references would result in a significantly degraded rather than enhanced system as will be discussed below. Furthermore, the rejection should be withdrawn since it is based on a miss-interpretation of the applied portions of the references.**

Furthermore, as will also be discussed below, the Xia et al. patent (US 6,014,466) and the Zhu patent(US 5,5757,668), alone or in combination, do not render obvious claims 34-39.

Applicant notes that the Zhu patent was applied in the parent application and the current claims were carefully written to distinguish over the reference whether it was considered alone or in combination with other references.

In the rejection of the claims, there seems to be a repeated miss-understanding that citing what might be considered ordinary block based motion compensation and image segmentation somehow renders the recited claim features obvious. Applicant notes that the cited references do not disclosure the combination of features recited in the pending claims and repeatedly citing references which show that images may be divided into blocks for processing does not render obvious the previously discussed claim features which relate to encoding constraints. The previously discussed claim features continue to distinguish over the references cited by the Examiner.

III. **Brief Discussion of the Invention**

In various exemplary embodiments of the present application a region which occurs in each of a series of frames may be designated and protected in the sense of constraints with regard to motion compensated predictions which may be used in coding the series of sequential frames. The prediction restrictions imposed in various exemplary embodiments facilitates image replacement, e.g., the ability to insert (replace) a picture or image in a portion of one or more frames in the series of frames, without affecting other portions of the frames. The Examiner seems to be attempting to interpret the "predetermined regions" recited in various claims as corresponding to blocks or macroblocks which are regions of orthogonal transform coding which can be used in

motion compensated predictions. While the "predetermined regions" recited in the claims may correspond to one or more blocks or macroblocks of a frame, it should be appreciated that when the Examiner reviews how the macroblocks and blocks of the applied references are used in coding it should be appreciated that the methods and apparatus disclosed in the applied references do not disclose or suggest the claimed subject matter.

Generally speaking, the goal of the various references cited by the Examiner is to optimize coding efficiency through the use of motion vectors and/or other coding techniques. The coding constraints recited in the pending claims are contrary to a goal of optimizing coding efficiency.

Various exemplary embodiments described and claimed in the present application accept the risk of a reduction in coding efficiency to facilitate the ability to insert, e.g., an inset picture, easily. This reduced efficiency results from the constraints of limiting the image areas which can be used for particular motion compensated predictions. The techniques that the Examiner cites are intended to maximize coding efficiency and do not disclose the features recited in various claims. **In fact, by seeking to optimize coding efficiency the references actually teach away from the coding restrictions imposed in various embodiments of the present invention which have the result of restricting predictions.**

It is requested that the Examiner keep the above comments in mind when considering the remarks which follow.

IV. The Rejections Under §103 Should Be Withdrawn

1) Claims 23-33 Are Patentable

The Examiner rejected claims 22-33 under 35 USC §103(a) as being unpatentable over the De With et al. patent (US 5,530,481) in view of Keesman et al. patent (US 5,805,225). These are the same references which were previously addressed. While the Examiner cites new portions of these references, the cited portions, when considered alone or in combination, continue to fail to disclose the recited claim features or render claims 32-33 obvious.

Notably, the Examiner's current rejection includes various statements which do not accurately reflect what is described in the De With et al. patent. Further, and perhaps even more importantly, **the Examiner's suggested modification of the system described in the De With et al. patent would limit the possible search range of motion vectors based on an image unit described in the Keesman et al. patent, a macroblock, which is also referred to as a subpicture** (See col. 5, line 23).

The Keesman et al. patent is describing, in the Examiner cited portion, MPEG which is clear from the reference to "the MPEG standard". Applicant notes that **the macroblock unit** identified by the Examiner **is the basic unit in MPEG and in the Keesman et al. patent, for motion compensation purposes.** (See for example col. 5).

In essence, in the Examiner's current proposed combination, the Examiner is arguing that one reading the Keesman et al. patent which discusses a macroblock, **the basic unit for which a motion vector may be computed in the Keesman et al. patent,** would be motivated to limit the search for

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motion compensation prediction purposes to the corresponding
unit (macroblock) of another frame which occurs in the same
location as the macroblock of the frame for which a motion
vector is computed. **In essence, the Examiner is arguing that
it would be obvious to combine the references and create a
system where motion compensation vectors are limited to only
cases where there is NO motion. This clearly is NOT an
improvement** and is contrary to the purpose of a motion vector
which is, by its very name, intended to deal with motion.
One of ordinary skill in the art would NOT be motivated to
produce a system of the type proposed by the Examiner from
reading the applied references. Accordingly, the rejection
of the claims should be withdrawn.

Applicant will now address the Examiner's rejection in
greater detail.

A. Claim 23
Recites Patentable Features

Representative claim 23 is directed to receiving encoded
video data that was encoded in a specific manner, e.g., a
manner that makes sure that a particular image area includes
motion vectors which only reference a corresponding image
area which occurs in the same location in each of the series
of images. The image areas recited in the claim are
predetermined prior to encoding. Thus, the decoder can rely
on the first predetermined image area **occurring in the
predetermined location** regardless of the content of the
encoded image.

As previously discussed, the encoding constraint has the advantage that the motion vectors for the first image area will not reference other portions of the image. Thus, it is known that changes to the coded data corresponding to other portions of the image will not affect the decoding of the first image area. This facilitates decoding and reduces the risk of errors particularly where changes to the encoded image data may be made, e.g., to insert or modify a portion of an image.

The constraint recited in claim 23 on the encoded image data and the motion vector limitation recited therein is not taught, disclosed or suggested by the applied references whether they are considered alone or in combination. **The references fail to teach, disclose or suggest receiving encoded image data of the type recited in claim 23 and decoding the image data as recited in the claim.** Accordingly, the rejection of claim 23 should be withdrawn.

Claim 23 is patentable because it recites, among other things, the features indicated in bold below:

A video processing method comprising the steps of:
receiving encoded video data representing **a series of images, said encoded video data having been encoded using motion compensated prediction on at least some of the images being encoded,** *each encoded image in said series of images including a first predetermined contiguous image area* and *a second predetermined contiguous image area*, **each of said first and second predetermined contiguous image areas being smaller than a full area of an image in said series of images,** *motion*

*vectors for the first predetermined
contiguous image areas using for predictions
only pixels within first predetermined
contiguous image areas*, each of said first
predetermined contiguous image areas being
located at the same location in each of said
series of images, said same location having
been determined prior to encoding; and
decoding said received encoded video
data.

B. Claims 23-33 Are Patentable For Several Reasons

In rejecting representative claim 23, the Examiner states:

Claims 23-33 are rejected under 35
U.S.C. 103(a) as being unpatentable over De
With et al. (US 5,530,481) in view of
Keesman et al. (US 5,805,224).
Based upon the interview dated
0711512008, the cited portion of De With did
teach the claimed limitations as indicated
in the interview summary. However, taking
the entirely De
With reference as a whole, De With still
teaches the claimed limitation as follows.
Re claims 23 and 28, De With discloses
a video processing device (fig. 2) for
carrying out a video processing method
comprising the steps of:
receiving encoded video data
representing a series of images (2 and 30 of
fig. 2; the demultiplexer receives the
encoded video data), said encoded video data
having been encoded
using motion compensated prediction (19 or
32 of fig. 2, the same motion compensation
is used in the encoder and decoder, see also
fig. 2) on at least some of the images being
encoded (14 of
fig. 2), each encoded image in said series
of images including

a first contiguous image area **(B1-B9** of
fig. 2, B(i,j) is block of the current
image, see col. 5, lines 46-52) and a second
contiguous image area (81-B9 of fig. 2;
co1.3, lines 22-36), each of said first and
second contiguous image areas being smaller
than a full area of an image in said series
of images (3x3 blocks is a search area
smaller than full area as a frame or image),
**motion vectors (col. 3, lines 12-18,50-
67) for the first contiguous image areas
using for predictions only pixels within
first predetermined contiguous image areas
(col. 3, lines 39-50),**
said first contiguous image areas *being
located at the same location* **(col. 3, lines
45, lines 48, note a block Bpr(i,j) of the
prediction image with the same coordinates
(i,j) as the
currently processed block B(i,j) of the
current image;**
this disclosure obviously indicates
that the
first contiguous image areas being located
at the same location as the series of
images) in each of
said series of images);
said same location **having been
determined prior to encoding (col. 3, lines
45-48);** and
a decoder (30-36 of fig. 2) for
decoding said received encoded video data.

**It is noted that De With et al. does
not particularly teach the predetermined
contiguous image areas as claimed.**
However, Keesman teaches the
predetermined contiguous image areas (col.
1, lines 15-21) **wherein the predetermined
number of contiguous blocks (areas) are
prior encoding (1 of fig.1).** (Office
Action, bold added)

The Examiner notes that <u>De With et al</u>. patent does not
teach **the predetermined contiguous image areas as claimed.**

Applicant agrees that the reference is deficient. **Since the De With et al patent does not disclose the recited image areas it also does not, and can not, disclose the encoding related features which depend on the recited image areas.**

The Examiner cites the Keesman et al. patent (col. 1, lines 15-21) **which discusses a macroblock** in an MPEG system and seems to assert that a macroblock corresponds to the predetermined image area as claimed. This does not make up for the deficiency of the De With et al. patent. As noted above, in MPEG and thus the system described in the Keesman et al. patent, motion compensation is performed on a macroblock level NOT a block level. In the Keesman et al. patent a macroblock is equated to a subpicture. The macroblock is the minimal unit for motion compensation in the Keesaman et al. patent. If a macroblock is to be interpreted as the "predetermined contiguous image area" as the Examiner seems to suggest, combining the references would result in the "block" used in DeWith et al. as corresponding to a macroblock. Such a combination does not make sense since the idea of motion compensation is to take into consideration the possibility of motion and not limit the encoding to the same macroblock. Even if the Examiner asserts that motion compensation predictions would be performed on blocks within the macrobock, the Examiner seems to be limiting the search region to an area of blocks which are at most an area corresponding to 16x16 pixels which is the area of a macroblock. **This does not allow for a lot of motion and certainly there is nothing in the references that suggests such a limited search range is desirable or beneficial.** Limiting the use of motion vectors to motion corresponding to blocks within a macroblock certainly would likely result in

decreased coding efficiency rather than increased coding efficiency due to a likely increase in coding overhead and the inability of the coding process to take advantage of motion which corresponds to a range of motion which extends beyond a macroblock.

Applicant notes that the Examiner attempts to read predetermined image area as corresponding to the blocks of a macroblock also seems inconsistent with the Examiner's claim mapping where the Examiner states, citing the De With patent, "a first contiguous image area (B1-B9 of fig. 2, B(i,j) is block of the current image" .   **B1-B9 refer to sub-memories which store 3*3 blocks where each block corresponds to 8 pixels. (See col. 3, lines 40-45).** Applicant's representative has no clear idea of how the Examiner is proposing to modify the De With structure to take into consideration macroblocks of Kessman et al. However Applicant's representative looks forward to obtaining clarification from the Examiner during the possible interview as to how the Examiner is intending for the systems of the two patents to be combined.

For the forgoing reasons the rejection of claims 23-29 should be withdrawn since claim 23 is not rendered obvious by the applied references. Claims 30-33 are patentable for the same or similar reasons claim 23 is patentable.

If the Examiner maintains or issues any new rejection on the De With patent or Keesman et al. patent it is requested that the Examiner clarify the rejection.

Is the Examiner asserting that the Keesman et al. patent teaches that the first predetermined **contiguous image area be**

a single macroblock in size, multiple macroblocks in size or something else? What is the Examiner's basis for this size unit and where in the reference does it suggest that there should be some encoding constraint of the type recited in claim 23 based on the size the Examiner identifies.

C.   New Claims 40, 41 and 42 Are Patentable

New claims 40, 41 and 42 are patentable for the same reasons as the independent claims from which they depend but also for the features they recite.

New claim 40 is patentable because it recites:

> The video processing method of claim 23, **wherein said first and second predetermined contiguous image areas each includes multiple macroblocks.**

The Examiner's apparent attempt to interpret the predetermined contiguous image regions as corresponding to an individual macroblock clearly does <u>NOT</u> render obvious new claim 40 where the contiguous image regions each include multiple macroblocks.

Furthermore, claim 41 is patentable because it recites the additional feature indicated in bold below:

> The video processing method of claim 40, **wherein said encoded video data is MPEG-2 compliant and wherein macroblocks are MPEG-2 macroblocks.**

Applicant's representative does not fully understand what type of modifications the Examiner is proposing to the references but if the Examiner is proposing using motion vectors which are not based on MPEG-2 macroblocks which seems

to be the case, the Examiner's combination would not render
obvious or anticipate the subject matter of claim 41
regardless of the Examiner's position with respect to the
other claims.

2) Claims 34-39 Are Patentable

**The rejections of claims 34-39 seem to be based on the
same general miss-understandings which are made with the
rejection of the other claims.**

**In the Office Action the Examiner rejected claims 34-39
stating:**

> Claims 34-39 are rejected under 35 U.S.c.
> 103(a) as being unpatentable over Xia et al.
> (US 6,014,466) in view of Zhu (US
> 5,757,668).
> Re claim 34, Xia discloses a method of
> processing video data …
> It is noted **that Xia does not
> particularly teach the first non-overlapping
> image segment occurring in the same location
> in each of the first and second images as
> claimed.**
> However, Zhu teaches the first non-
> overlapping image segment (col. *S,* lines 18-
> 21, note a video frame to be encoded is
> first segmented into non-overlapping blocks)
> occurring in the same location in each of
> the first and second images *(col.* 5, *lines
> the matching error betv,Jeen the original
> block (ORIGINAL BLOCK offig.* 1) *and the
> corresponding block in the reference frame
> (REFERENCE FRAA1E ofig.* 1) *at the same
> location).*
> Taking the teachings of Xi a and Zhu as
> a whole, it would have been obvious to one of
> ordinary skill in the art to modify the
> teachings of Zhu into the motion compensation
> of Xia to find the best match s**ince it neither**

> **improves the coded picture quality nor reduces the bitrate. (Office Action bold added)**

Applicant notes that the Examiner seems to be arguing that the there is no benefit to the combination he is suggesting. The Examiner seems to be arguing that **the Examiner's suggested modifications will neither improve the coded picture quality nor reduce the bitrate".** If this is the case, one would certainly **NOT** be motivated to combine the references as the Examiner suggests since there is no benefit to be gained. Applicant requests that the Examiner clarify what the Examiner considers to be the alleged benefit of the combination.

While there does not appear to be any benefit to the Examiner's proposed combination, and very possibly encoding degradation if the references were combined as the Examiner seems to suggest, the combination would still not render obvious the claimed subject matter.

Claim 34 is patentable because it recites the features indicated in bold below:

> A method of processing video data comprising the steps of:
> receiving encoded video data representing a second image that was encoded as a function of a first image, the first and second images each including a first and a second non-overlapping image segment, **each of the first and second non-overlapping image segments including a plurality of vertically contiguous pixels, the first non-overlapping image segment occurring in the same location in each of the first and second images, the location of said first non-overlapping image segment being determined *prior to encoding of the first and second images*, said encoded video data representing the second image using as**

> *reference data from the first image, only*
> *image data corresponding to the first image*
> *segment of the first image*, for motion
> vectors representing a portion of the first
> image segment of the second image and using
> as reference data from the first image,
> image data corresponding to the second image
> segment of the first image, for motion
> vectors representing a portion of the second
> image segment of the second image; and
>   decoding said received encoded video
> data.

The Examiner seems to fail to appreciate that the claim recites:

> *said encoded video data representing the*
> *second image using as reference data from the*
> *first image, <u>only image data corresponding to</u>*
> *<u>the first image segment of the first image</u>,*

Even if the same segmentation technique is used in each image, the above noted constraint is not disclosed or suggested by the applied references when they are considered alone or in combination. Furthermore, such a constraint has an impact on coding. Any assertion by the Examiner that this is not likely to have an effect on at least one of **coded picture quality or coded bitrate is contrary to the general fact that the more constraints on the coding, the lower the freedom of an encoder to optimize the coding to achieve the optimum bit rate or image quality. The above noted features are significant.**

In view of the above remarks, it is respectfully submitted that the rejection of claims 34-39 should be withdrawn.

V.   Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are in condition for allowance[1]. Accordingly, it is requested that the Examiner pass this application to issue.

To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made and any required fee in regard to the extension or this amendment is authorized to be charged to the deposit account of Straub & Pokotylo, deposit account number 50-1049.

                    Respectfully submitted,

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[1] Any arguments made in this amendment pertain **only** to the specific aspects of the invention **claimed.** Any claim amendments or cancellations, and any arguments, are made **without prejudice to, or disclaimer of,** the applicant's right to seek patent protection of any unclaimed (e.g., narrower, broader, different) subject matter, such as by way of a continuation or divisional patent application for example.
   Since the Applicant's remarks, amendments, and/or filings with respect to the Examiner's objections and/or rejections are sufficient to overcome these objections and/or rejections, the applicant's silence as to assertions by the Examiner in the Office Action and/or to certain facts or conclusions that may be implied by objections and/or rejections in the Office Action (such as, for example, whether a reference constitutes prior art, whether references have been properly combined or modified, whether dependent claims are separately patentable, etc.) is not a concession by the applicant that such assertions and/or implications are accurate, and that all requirements for an objection and/or a rejection have been met. Thus, the Applicant reserves the right to analyze and dispute any such assertions and implications in the future.